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PN - JP9050082 A 19970218  
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 OPD - 1995-08-04  
 TI - PROJECTION TYPE DISPLAY DEVICE  
 IN - SHIKAMA SHINSUKE; KIDA HIROSHI; OKAMORI SHINJI; TODE HIDEKAZU  
 PA - MITSUBISHI ELECTRIC CORP  
 IC - G03B21/14 ; G02B5/22 ; G09F9/00 ; H04N5/74 ; H04N9/31

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TI - Display device for projector - has synthetic part which combines condensed beam of reflective mirrors to single beam  
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 PN - JP9050082 A 19970218 DW 199717 G03B21/14 008pp  
 US5765934 A 19980616 DW 199831 G03B21/28 000pp  
 PA - (MITQ ) MITSUBISHI ELECTRIC CORP  
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 IC - G02B5/22 ; G03B21/14 ; G03B21/28 ; G09F9/00 ; H04N5/74 ; H04N9/31 ; G02B5/22 ; G03B21/14 ; G03B21/28 ; G09F9/00 ; H04N5/74 ; H04N-00/91  
 IN - DAIJOGO A; KIDA H; OKAMORI S; SHIKAMA S; TODE E  
 AB - J09050082 The device has a light source (1) with a pair of lamps (11, 31) and a couple of reflective mirrors (12, 22). The lamps illuminates the light valve elements ( 6R, 6G, 6B). The image formed by the light valve elements is enlarged by a projection lens ( 8) and is projected on a screen (10).  
 - The reflective mirrors condense the radiated beams of lamp and converge to a position in a synthetic part (16) which combines the condensed beam to a single beam.  
 - ADVANTAGE - Consumes less power. Provides high intensity.  
 - (Dwg. 1/5)  
 USAB - US5765934 The device has a mirror (12) which condenses the light irradiated from a light source (11). An optical refractor (19) refracts the light towards the first lenses (14a,14b).  
 - The light converged from the first lenses is projected through a light guide (16). The light from the optical guide is radiated almost in parallel to an optical valve (6) through a second lens (14c).  
 - ADVANTAGE - Ensures high definition and high efficiency of projection display device by reducing illuminance non-uniformity, beam irregularity, colour phase irregularity and uneven angle distribution characteristic. Provides lightweight and inexpensive light source device. Temperature management and replacement of light source can be performed easily.  
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 TI - PROJECTION TYPE DISPLAY DEVICE  
 AB - PROBLEM TO BE SOLVED: To provide a high-luminance and low-power-consumption projection type display device which can be continuously used without exchanging a lamp even when one lamp cannot be turned on because it is used to the limit.

SOLUTION: A light source 1 is provided with the plural lamps 11 and 31 and plural reflecting mirrors 12 and 22. Then, luminous flux emitted from the plural lamps 11 and 31 is synthesized to the single luminous flux by a synthesis means 16 so as to illuminate light valve elements 6R, 6G and 6B. A picture formed on the element 6 is enlarged and projected on a screen 10 by a projection lens 8. All of the plural lamps 11 and 31 or the optional number other than all of them are simultaneously driven. As the synthesis means 16, one of an optical guide, a bending type reflection mirror and a reflection prism is used.

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